

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. After amending the claims as set forth above, claims 1, 4-12, 14-16, and 19-29 are now pending in this application.

Applicant wishes to thank the Examiner for the careful consideration given to the claims.

Specification

The disclosure is objected to because “raider” in paragraphs 0054 and 0079 should be “radar.” Paragraphs 0054 and 0079 have been amended to correct these informalities. For at least this reason, favorable reconsideration is respectfully requested.

Rejection of claims 1-10 and 12-27 based on Seto

Claims 1-10 and 12-27 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication 2003/0067219 (“Seto”). For at least the following reasons, this rejection is traversed.

Claim 1 has been amended to recite “a control unit that varies an assumed steering characteristic of the vehicle dependent on manual steering operation in accordance with a condition of a path where the vehicle is traveling and executes an automatic braking control operation to avoid a potential collision with the obstacle, based on the assumed steering characteristic.” Claims 10 and 12 recite similar features. Seto does not teach or suggest these combinations of features.

For example, Seto does not teach an assumed steering characteristic dependent on manual steering operation in accordance with a condition of a path where the vehicle is traveling. The assumed characteristic can be selected based on, for example, the avoidance space width on the sides of the obstacle where the vehicle is to travel. In one embodiment of the present invention, the assumed steering characteristic is determined, for example, using the steps in FIG 2. Step S2 is where the widths of the avoidance spaces on the sides of a forward obstacle are detected. Step S3 is where a degree of easiness of the steering-based collision avoidance is estimated based on the left and right avoidance space widths. Step S4 is where an assumed steering characteristic of the vehicle dependent on manual steering operation is determined based on the estimated degree of easiness of the steering-based collision avoidance. The selection of the assumed steering characteristic is shown, for

example, in FIGS. 5 and 6. Step S5 of FIG. 2 is where the direction of steering-based collision avoidance is determined in consideration of the degree of easiness of the steering-based collision avoidance.

In contrast, Seto merely teaches the determination of the lateral distance “Y” needed for avoiding a possible collision but does not consider the condition of the path that the vehicle is traveling, for example, the easiness of the steering-based collision avoidance, the width of the road, or the avoidance space on either side of the obstacle.

The PTO has pointed out in the rejection of claims 3 and 18 that FIG. 4 shows the condition of the road as being partially blocked while FIG. 3 shows that there still seems to be space available to each side of the preceding vehicle. However, FIGS. 3 and 4 of Seto merely show the measurement of the vehicle interval distance using a laser-radar and there is no teaching or suggestion to support the proposition that an assumed steering characteristic in accordance with the available space on each side of the preceding vehicle is being varied.

Claims 4-9, 14-16, and 19-27 depend from claim 1 or claim 12 and are allowable therewith for at least the reasons set forth above without regard to the further patentable features contained therein.

Additionally, in relation to dependent claims 5-6, 8-9, 22-23, and 25-26, there is no teaching or suggestion of an “avoidance space width detecting unit that detects widths of spaces on the sides of the obstacle.” According to an embodiment of the present specification, the degree of easiness of steering-based collision avoidance may be determined, for example, in accordance with the width of space on the sides of the obstacle. Then, the direction of steering-based collision avoidance can be determined in accordance with the degree of easiness of the steering-based collision avoidance prior to the consideration of the required lateral displacement. Further, the width of space on the sides of the obstacle can be defined, for example, by the geometrical relationship between the obstacle and width the road. In contrast, Seto merely determines the vehicle interval distance between the host vehicle and the obstacle (i.e., the preceding vehicle) and a lateral moved distance. Thus, Seto merely discloses detecting the relationship between the preceding vehicle and the host vehicle, but fails to disclose anything about the spaces on the sides of the preceding vehicle. As a result, Seto fails to disclosed the claimed control unit of claims 5-6, 8-9, 22-23, and 25-

26 because Seto does not teach an "avoidance space width detecting unit that detects widths of spaces on the sides of the obstacle."

For at least these reasons, favorable reconsideration is respectfully requested.

Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 10/6/2006

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